

REMARKS

This paper is responsive to the Office Action dated June 14, 2007 (the "Office Action").

Claims 1-117 and 119-124 were previously pending in the application. Claims 120 and 123 have been canceled in this paper, and new claims 125 and 126 have been added in this paper. Accordingly, claims 1-117, 119, 121, 122, and 124-126 are now pending.

Claims 8-13, 15, 18-28, 36-41, 43, 46-56, 64-69, 71, 74-84, 92-97, 99, 102-112, 121, and 122 are under objection.

Claims 1-7, 14, 16, 17, 29-35, 42, 44, 45, 57-63, 70, 72, 73, 85-91, 98, 100, 101, 114-117, 119, and 124 stand rejected.

Claim 113 has been allowed.

Formal Matters

Applicant expresses gratitude to the Examiner for the telephone conversation between the Examiner and the undersigned representative on September 17, 2007. That conversation included a discussion of the limitations in claim 121, which has been deemed allowable. As discussed, Applicant has introduced new claims 125 and 126 in this paper, with limitations that were also discussed during the telephone conversation.

Allowable Subject Matter

Applicant expresses gratitude for the indication that independent claim 113 is allowed, and that dependent claims 8-13, 15, 18-28, 36-41, 43, 46-56, 64-69, 71, 74-84, 92-97, 99, 102-

112, 121, and 122 would be allowable if rewritten in independent form including all of the limitations of the respective base claims and any intervening claims. Applicant wishes to maintain the dependent claims in dependent form in view of the following remarks on the allowability of the corresponding base claims.

Rejection of Claims under 35 U.S.C. § 103

Claims 1-3, 29-31, 57-59, 85-87, 114-117, 119, and 124 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,282,170 issued to Bentall et al. (“Bentall”), in view of U.S. Patent Publication No. 2002/0118636 naming Phelps et al. as inventors (“Phelps”). Claims 4-7, 14, 16, 32-35, 42, 44, 60-63, 70, 72, 88-91, 98, and 100 stand rejected under § 103(a) as being unpatentable over Bentall in view of Phelps, and further in view of U.S. Patent No. 6,728,205 issued to Finn, et al. (“Finn”). Claims 17, 45, 73, and 101 stand rejected under § 103(a) as being unpatentable over Bentall and Phelps in view of Finn and further in view of U.S. Patent No. 6,430,150 issued to Azuma, et al. (“Azuma”).

Applicants respectfully submit that the claims are allowable under § 103(a) because the cited portions of the references fail to disclose each limitation of Applicant’s claims, and because a person having ordinary skill in the art would not make the proposed combination of references.

More specifically, the cited portions of Phelps do not disclose what the Office Action asserts as being disclosed. Further, if the Office Action’s characterization of Phelps is correct (a point which Applicant does not concede), then a person having ordinary skill in the art would not combine the references as suggested by the Office Action.

The cited passages fail to disclose each limitation of Applicant's claims.

Applicant's claim 1 includes **receiving information from a candidate node, with the information indicating that the candidate node has sufficient resources to support a virtual path.** This limitation is not disclosed in the cited portions of the references.

With regard to this limitation, the Office Action on p. 3 turns to Phelps. Phelps discloses tools for redirecting data communication via an alternate path. (Phelps at Abstract.) FIG. 3 of Phelps shows an example of a network with a failure 300 that has occurred on communication link 120.

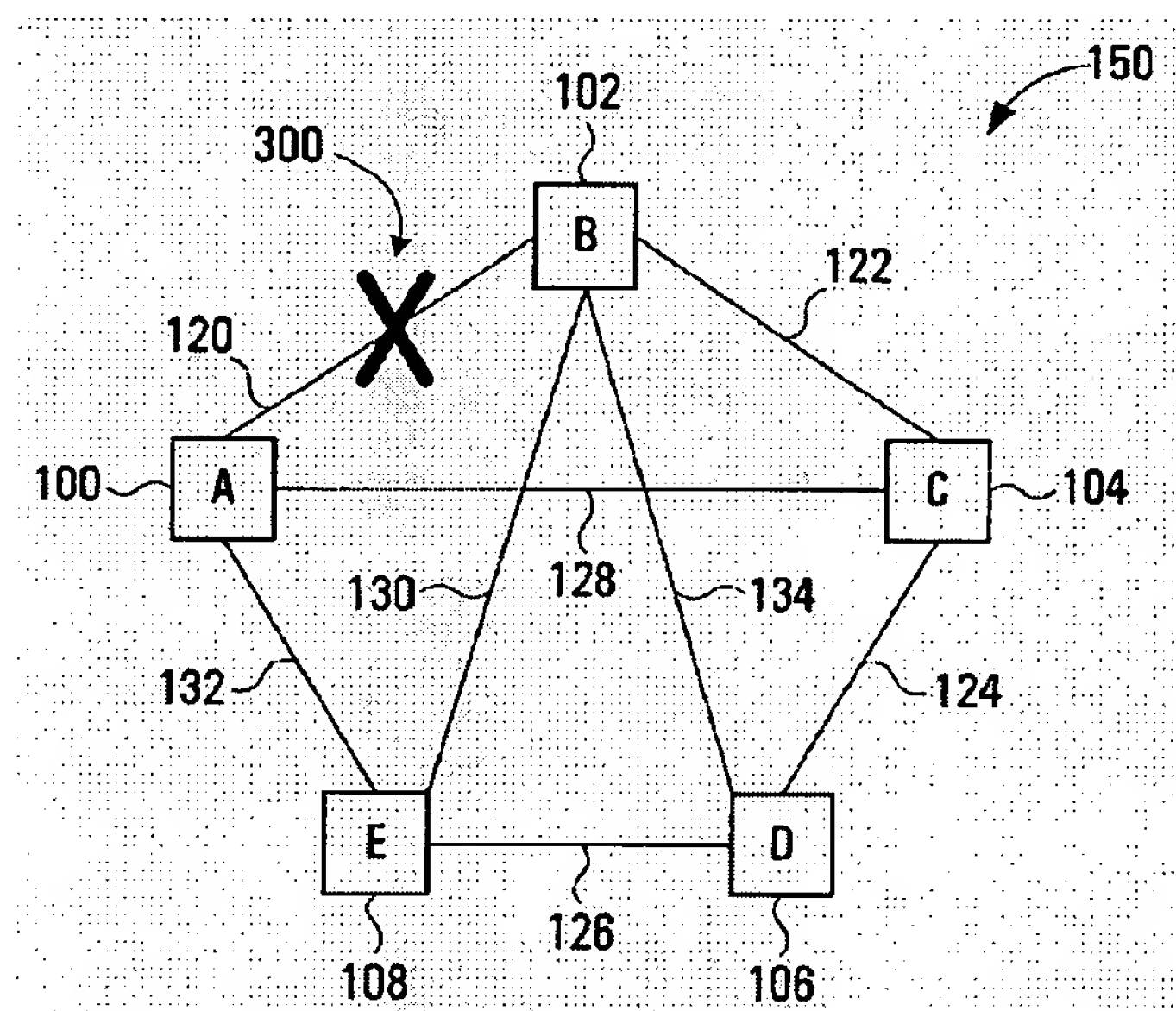


FIG. 3 of Phelps

The example failure in Phelps had disrupted communication between two nodes 100 and 102. Phelps describes operations for locating an alternate path between nodes 100 and 102. (Phelps at para. 40.) In particular, the operations examine a path that includes nodes 100, 104, and 102. (*Id.* at para. 41.)

Phelps describes the use of messages communicated among these nodes to evaluate this path. A “request message” is sent from node 100 to nodes 102 and 104. (*Id.*) “More specifically, the request message is first sent to the next computing node in the path, which in the case is computing node 104. The request message includes the amount of spare transport capacity to be reserved on the ring protection path between computing node 100 and 102.” (*Id.* at para. 42.)

The Office Action appears to equate node 104 in Phelps with the “candidate node” in Applicant’s claim 1. Even if this characterization of Phelps is correct (and Applicant does not concede this point), the Phelps node 104 does not operate as a candidate node that provides information indicating that it has sufficient resources to support a virtual path.

With regard to the “receiving” in Applicant’s claim 1, the Office Action cites the following passage and FIG. 4 of Phelps:

[0043] If there is spare data transport capacity on the communication link between computing node 104 and the next computing node in the alternate path, namely computing node 102, condition 410 is answered in the affirmative. In this case, the process returns to step 404 where computing node 104 temporarily reserves that excess transport capacity for use in the ring protection path.

(Phelps at para. 43, lines 1-7.)

This passage considers a situation where there is spare data transport capacity between the Phelps node 104 and the next node in an alternate path. This passage does not, however, describe any communications from the ostensible candidate node (Phelps node 104). In particular, this passage does not include any communications of information indicating that node 104 has sufficient resources to support a virtual path.

The discussion accompanying the cited passage does describe two reply messages that are sent back to node 100. Applicant notes that these messages also do not support the pending rejection. Neither of these reply messages includes information indicating that node 104 has sufficient resources to support a virtual path.

One of the possible reply messages is transmitted from node 104 back to node 100. “If there is no spare transport capacity available in the following communication link 122, condition 410 is answered in the negative and at step 416, computing node 104 generates a reply message for transmission to the computing node having originated the request for a ring protection path (namely computing node 100) indicating that the request for establishing of a ring protection path cannot be granted.” (Phelps at para. 42.) This reply message is thus a failure message; it does not indicate that node 104 has sufficient resources to support a virtual path.

The other reply message related to the cited passage is an affirmative reply, sent from node 102 to node 100. This reply is generated “[i]f there is spare data transport capacity on the communication link between computing node 104 and the next computing node in the alternate path, namely computing node 102” (Phelps at para. 43). In this case, “at step 412 computing node 102 generates and transmits a reply message to the computing node having originated the request for the ring protection path, namely computing node 100. The reply message includes the capacity reserved on the ring protection path” (Phelps at para. 44).

This second reply message does not, however, indicate that a candidate node “has sufficient resources” to support a virtual path. This second reply message includes the capacity that has been reserved, but this capacity may or may not be “sufficient.” Indeed, Phelps makes clear that this reserved capacity may not be adequate to satisfy the amount of capacity specified

in the original request message, since the determining condition 410 is considered successful even “[i]f the request can be granted for a smaller transport capacity than originally asked for” (Phelps at para. 43). Thus, even if the amount of capacity specified in Phelps’s original request message is viewed as corresponding to the “sufficient resources” in claim 1 (a point which Applicant does not concede), Phelps makes clear that this amount of capacity may not be successfully reserved in situations where the second reply message is transmitted.

Accordingly, the cited passages fail to disclose the limitation of “receiving, from a candidate node, information indicating that said candidate node has sufficient resources to support said virtual path.” At least for this reason, independent claim 1 and all claims dependent therefrom are allowable under § 103(a). At least for similar reasons, independent claims 29, 57, and 85 and all claims dependent therefrom are also allowable under § 103(a).

A skilled artisan would not combine Bentall and Phelps as proposed by the Office Action.

The rejection of Applicant’s claim 1 relies on a combination of Bentall with Phelps. The Final Office Action suggests on p. 3 that:

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Bentall to implement the process of checking capacity of link at each computing node by transmitting request message so that a given virtual path would be re-established through an alternate route with sufficient bandwidth.

(Final Office Action at 3.)

Applicant respectfully disagrees with this conclusion. First, Applicant notes that this combination of Bentall with Phelps is relevant only if, as proposed in the Office Action, Phelps discloses the limitation of “receiving, from a candidate node, information indicating that said

candidate node has sufficient resources to support said virtual path.” As noted above, Applicant disagrees with this proposition.

Applicant further notes that a person having ordinary skill in the art would not combine the teachings of Bentall and Phelps, because Bentall does not require and would not even benefit from indications of sufficient resources from candidate nodes (even if Phelps could possibly be seen as having such indications). In Bentall, a determination of routes with “sufficient capacity for the path” is made not by candidate nodes, but by a chooser node that is located at one end point of a failed link (Bentall at 1:56-59). Operations of the Bentall chooser node are described in the following excerpt:

The chooser node receives floods of search messages from the sender via tandem nodes, at step 140. The flooding instance of messages searches out all spare capacity between the sender and chooser, but does not assign any capacity to a specific path, unlike previous methods. At step 141, the chooser node builds a database of the possible alternative routes, including at least the hop counts of each route, the spare capacity of each link on the route, and other parameters which may assist in enabling the chooser to select the most appropriate alternative route for each virtual path affected by the failed link. To restore the affected virtual paths, the chooser can begin assigning capacity as soon as the first complete path arrives. Assignment depends on the particular assignment algorithm used. Various types of assignment algorithm are conceivable, with differing results in terms of efficiency of use of the spare capacity. A simple FCFS (First Come First Served) algorithm simply assigns virtual paths to spare capacity in a random fashion as soon as the capacity is identified by receipt of flood messages from the sender.

The chooser acknowledges the shortest route for each path with sufficient capacity for the path, by sending a message back to the sender, at step 142 of FIG. 9. The database of alternative routes can be amended to reflect the reduced spare capacity available for other virtual paths, at step 143. The chooser continues through its list of affected virtual paths, until all have been restored, or until all remaining virtual paths are blocked by a lack of spare capacity on alternative routes, as shown at step 144.

(Bentall at 7:61—8:22, emphasis added).

Bentalls's chooser node is therefore equipped to select alternative routes for each virtual path affected by a failed link. This operation involves identifying shortest routes that have sufficient capacity for each path. Thus, the Bentall system does not need candidate nodes to make indications of sufficient resources; this determination is made by the chooser node, which aggregates information on various alternative routes and "select[s] the most appropriate alternative route for each virtual path." The Bentall system operates adequately, and would not benefit from this determination being made by other nodes that do not have access to the full information received by the chooser node. Thus, even if Phelps could be seen as disclosing the "receiving, from a candidate node, information indicating that said candidate node has sufficient resources to support said virtual path" (again, a point with which Applicant disagrees), this feature would not be useful or usable in Bentall.

Moreover, Applicant notes that the proposed combination of Phelps and Bentall would certainly not be helpful to achieve the goal proposed in the Office Action. The Office Action proposes on p. 3 that the teachings of Phelps could be used to modify the system of Bentall "to implement the process of checking capacity of link at each computing node by transmitting request message." The goal would be "so that a given virtual path would be re-established through an alternate route with sufficient bandwidth." However the Bentall chooser already identifies alternate routes with sufficient capacity for various paths, as discussed above and as set forth in Bentall at 8:14-16. Thus, Bentall does not need the teachings of Phelps to achieve this goal. A person having ordinary skill in the art would not modify Bentall to achieve a goal that is already achieved by the teachings of Bentall itself. Thus, even this particular goal set forth in the Office Action would not lead to a combination of the cited references.

Applicant submits that for these reasons a person having ordinary skill in the art would not make the proposed combination of Bentall and Phelps. At least for this additional reason, independent claim 1 and all claims dependent therefrom are additionally allowable under § 103(a). At least for similar reasons, independent claims 29, 57, and 85 and all claims dependent therefrom are also additionally allowable under § 103(a).

New claims

New claims 125 and 126 depend on independent claim 1. Accordingly, new claims 125 and 126 are allowable at least for the reasons set forth above.

CONCLUSION

In view of the amendments and remarks set forth herein, the application and the claims therein are believed to be in condition for allowance and a notice to that effect is solicited.

Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is invited to telephone the undersigned at 512-439-5093.

If any extensions of time under 37 C.F.R. § 1.136 are required in order for this submission to be considered timely, Applicant hereby petitions for such extensions. Applicant also hereby authorizes that any fees due for such extensions or any other fee associated with this submission, as specified in 37 C.F.R. § 1.16 or § 1.17, be charged to deposit account 502306.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P. O. Box 1450, Alexandria, Virginia, 22313-1450, on November 14, 2007.

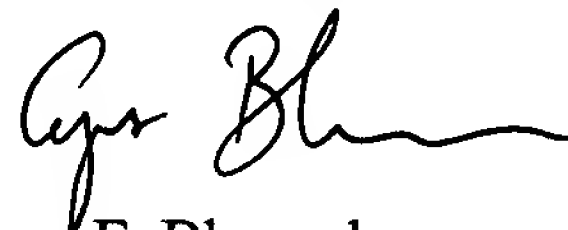


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2017 Nov 14

Date of Signature

Respectfully submitted,



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